

## I Claim:

- 1 1. An amplifier apparatus for use with a sensor; the apparatus comprising:
  - 2 (a) a first amplifying circuit segment and a second amplifying circuit segment;  
3 said first and second amplifying circuit segments being coupled with said sensor  
4 and cooperating to effect substantially balanced handling of signals received from  
5 said sensor; each of said first and second amplifying circuit segments including a  
6 first transistor device coupled in parallel with a second transistor device;  
7 (b) a feedback unit coupled with said first and second amplifying circuit  
8 segments; said feedback unit receiving signals from each of said first transistor  
9 device and said second transistor device in each of said first and second amplifier  
10 circuit segments; said feedback unit providing feedback signals to at least one of  
11 said first transistor device and said second transistor device in each of said first  
12 and second amplifier circuits to effect substantially balanced signal handling of  
13 signals by said first transistor device in each of said first and second amplifying  
14 circuit segments and to effect substantially balanced signal handling of signals by  
15 said second transistor device in each of said first and second amplifying circuit  
16 segments.
- 1 2. An amplifier apparatus for use with a sensor as recited in Claim 1 wherein said sensor  
2 is a read head in a data storage device.
- 1 3. An amplifier apparatus for use with a sensor as recited in Claim 1 wherein said first  
2 transistor device is a metal-oxide transistor device and wherein said second transistor  
3 device is a bipolar transistor device.
- 1 4. An amplifier apparatus for use with a sensor as recited in Claim 2 wherein said first  
2 transistor device is a metal-oxide transistor device and wherein said second transistor  
3 device is a bipolar transistor device.
- 1 5. An apparatus for use with a sensor; the apparatus comprising:

- 2 (a) a first signal treating circuit segment and a second signal treating circuit  
3 segment; said first and second signal treating circuit segments being coupled with  
4 said sensor for presenting a substantially balanced differential signaling  
5 representation of output signals from said sensor; each respective signal treating  
6 circuit segment of said first and second signal treating circuit segment comprising  
7 a plurality of circuit elements having asymmetric signal handling characteristics  
8 coupled in parallel and establishing a plurality of parallel asymmetric signal paths;  
9 and  
10 (b) a feedback circuit coupled with said first and second signal treating circuit  
11 segments; said feedback circuit providing various feedback signals to selected  
12 circuit elements of said plurality of circuit elements in each of said first and  
13 second signal treating circuit segments; said various feedback signals effecting  
14 substantially balanced signal handling among particular circuit elements of said  
15 selected circuit elements having symmetric signal handling characteristics in each  
16 said respective signal treating circuit segment.

1 6. An apparatus for use with a sensor as recited in Claim 5 wherein said sensor is a read  
2 head in an information storage device.

1 7. An apparatus for use with a sensor as recited in Claim 5 wherein said plurality of  
2 circuit elements is two circuit elements.

1 8. An apparatus for use with sensor as recited in Claim 7 wherein said two circuit  
2 elements are a metal-oxide transistor and a bipolar transistor.

1 9. An apparatus for use with a sensor as recited in Claim 6 wherein said plurality of  
2 circuit elements is two circuit elements.

1 10. An apparatus for use with sensor as recited in Claim 9 wherein said two circuit  
2 elements are a metal-oxide transistor and a bipolar transistor.

1 11. A differential amplifier apparatus for use with a sensor; the apparatus comprising:  
2 (a) a differential signal handling unit coupled with said sensor and including two  
3 signal handling sections receiving read signals from said sensor; said two signal  
4 handling sections effecting substantially balanced signal handling of said read  
5 signals to establish said differential signal handling; each respective signal  
6 handling section of said two signal handling sections including two semiconductor  
7 circuit elements coupled in parallel; said two semiconductor circuit elements  
8 having different signal handling characteristics; and  
9 (b) a feedback unit coupled with said differential signal handling unit; said  
10 feedback unit providing at least one feedback signal to said differential signal  
11 handling unit appropriate to effect operating respective semiconductor circuit  
12 elements of said two semiconductor circuit elements having like signal handling  
13 characteristics in substantial symmetry.

1 12. A differential amplifier apparatus for use with a sensor as recited in Claim 11 wherein  
2 said sensor is a read head in an information storage device.

1 13. A differential amplifier apparatus for use with sensor as recited in Claim 11 wherein  
2 said two semiconductor circuit elements are a metal-oxide transistor and a bipolar  
3 transistor.

1 15. A differential amplifier apparatus for use with sensor as recited in Claim 12 wherein  
2 said two semiconductor circuit elements are a metal-oxide transistor and a bipolar  
3 transistor.